UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF COMMERCIAL FISHERIES

CALIFORNIA FISHERY MARKET NEWS MONTHLY SUMMARY

JUNE 1968

PART II–Fishing Information*

Sea-surface temperatures, fishing and research information of interest to the West Coast tuna-fishing industry and marine scientists

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U. S. Department of the Interior
Bureau of Commercial Fisheries
Fishery-Oceanography Center
P. O. Box 271
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*Part 1 - "Fishery Products Production and Market Data" is issued by the Bureau of Commercial Fisheries, Market News Service, U. S. Custom House, Terminal Island, California

ALBACORE SHOW EARLY BUT COMMERCIAL FISHING SEASON NOT YET UNDERWAY

Preseason albacore scouting activities by three research vessels operating for the Bureau of Commercial Fisheries, California Department of Fish and Game, and Fish Commission of Oregon, have substantiated the early arrival of albacore off the U.S. West Coast. BCF R/V David Starr Jordan first reported taking four albacore near San Juan Seamount (33° N., 121° W.) on June 12 while trolling between stations on the CalCOFI sardine-anchovy survey grid from the southern tip of Baja California, Mexico north to San Francisco.

The California Department of Fish and Game R/V N. B. Scofield put to sea after coming out of the shipyard on June 19, and spent 1 week surveying the southern California offshore region from near San Juan Seamount to Cortez Bank and thence southward to about 31° N. latitude. Scofield reported taking two albacore on June 21 southwest of the Cortez Bank sea buoy, and on the next 2 days, reported taking four additional fish in the sector south to southeast of San Juan Seamount.

Despite the authenticated catches taken by these two vessels, the southern California fleet has failed to put to sea in quest of albacore. A continuing series of negotiations between the fishermen and the Pacific coast canners have failed to reach agreement on dockside price, and consequently, no one has established whether or not a large body of fish is present off southern California. Sport-fishing partyboats operating out of San Diego made early prospecting runs in the last week of June, but real action was not reported until the long July 4th weekend. Most sport catches have been made between Cortez Bank and 60-mile Bank.

M/V Sunrise, operating under charter to the Fish Commission of Oregon, departed Astoria, Oregon, on July 1, to survey the region between 125° and 127° W. longitude and thence from latitude 46° N. southward to 42° N. Sunrise first reported taking two albacore on July 3 at about 44° N., 127° W. and then proceeded to take a total of 263 fish on the remainder of the cruise from waters ranging from 58.5° to 62.5° F. Depth of the upper mixed layer was about 100 feet in the areas surveyed except for the first two stations near the mouth of the Columbia River.

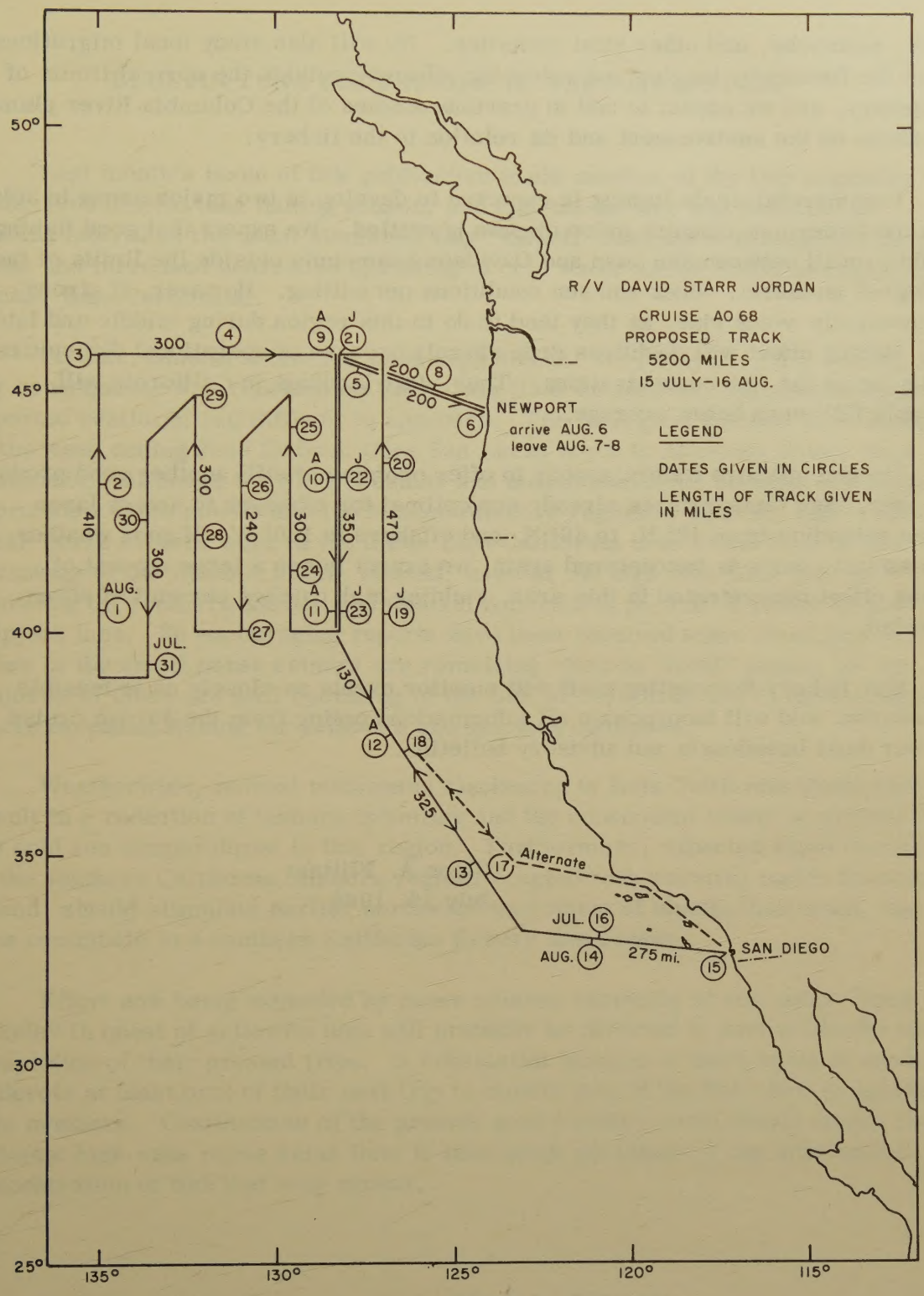
The large catch recorded by Sunrise firmly established the 1968 season as earliest since about 1944. The present preseason cruise has been the most successful ever for the Fish Commission of Oregon, and has revealed the earliest indications on record of substantial concentrations of fish.

In the past 3-4 weeks, open ocean warming trends in the region northeast of the Hawaiian Islands have appeared to be about 10-15 days ahead of the 1967 warming cycle. Expendable bathythermograph data obtained by the BCF Stanford Ocean Research Laboratory from a merchant vessel moving across a regularly visited section of the California Current, revealed that significantly warmer conditions than last year occur as deep as 1800 feet (600 meters). Thus, the warmer than normal sea surface temperatures that have been building rapidly in the open ocean off California and Oregon probably are more permanent than those observed last year. Persistent cyclonic weather patterns observed along the 150-155° W. longitude zone have appeared to augment the warming through surface water advection to the northeastward, and divergent wind flow patterns near shore appear to be creating more open skies, enabling a greater amount of radiant energy to reach the sea surface in that region.

BCF R/V David Starr Jordan will depart San Diego on July 15 on a survey to estimate the distribution and availability of albacore in offshore waters during the peak of the Pacific coast season, and to test prospects for commercial exploitation of albacore beyond the traditional limits of the fishery (beyond 300 miles from shore). The survey track is outlined in the accompanying figure.

The survey spans the oceanic regime where the sea surface temperature isotherm fields are nearly zonal (latitudinal) to the outer limits of the coastal regime where the isotherms become meridonal (longitudinal), defining a northeastward-protruding tongue of warm surface water which advances toward the Oregon-Washington coast from offshore during the summer. We will measure the depth of this warm tongue and evaluate the heat budget implications. The survey area is situated north of the subarctic boundary and is in the transition region characterized by a weak halocline, and deeper salinity minimum; the North Pacific Current is deflected from its eastward path in this area.

The Jordan cruise will extend our knowledge of the relations of albacore to the ocean environment (temperature, water mass characteristics, currents, etc.), and it will permit us to study these beyond the traditional limits of the fishery. We plan to monitor the advance of the sea surface isotherms and how they relate to the spatial distribution of the albacore during midseason, and to correlate findings with earlier works. We expect to extend our knowledge of the temperature structure of the upper mixed layer of the sea at critical times in the fishing season; and we also plan to study the temperature changes through time and energy exchange related to meteorological events. (We should see a 2-3° F. local temperature change and at least a 200-mile northward displacement of the 60-64° F. isotherm field during the cruise period.) In addition, we plan to add to the life history and ecological knowledge of the Pacific albacore by study of blood types,



Cruise track of BCF R/V David Starr Jordan Cruise AO-68, July 15-August 16, 1968. Dates are given in circles; length of track is entered in nautical miles.

livers, stomachs, and other vital statistics. We will also study local migrations within the fishery by tagging and releasing albacore outside the normal limits of the fishery, and we expect to add to previous studies of the Columbia River plume, its effects on the environment and its relation to the fishery.

Commercial-scale fishing is expected to develop in two major areas in July, once the fishermen-canners price dispute is settled. We expect that good fishing should prevail between San Juan and Davidson Seamounts outside the limits of the 60-degree isotherm, winds and sea conditions permitting. However, if strong northwesterly winds rise, as they tend to do in this region during middle and late July, fishing effort will doubtless drop sharply because of operational difficulties in staying on the fish concentrations. Thus, July landings in California will probably fall much below average.

Oregon offshore waters appear to offer promise of still another good production year. Sea temperatures already are optimal for albacore in a very large region extending from 42° N. to 46° N. and offshore to 130° W. If good weather such as last year's is encountered again, we expect to see a large amount of fishing effort concentrated in this area, yielding high catches per unit of effort expended.

Our fishery forecasting staff will monitor events as closely as is feasible this season, and will incorporate all information coming from the Jordan cruise into our daily broadcasts and advisory bulletins.

Glenn A. Flittner
July 10, 1968

BLUEFIN TUNA FISHERY OFF TO VERY POOR START

Last month's issue of this publication made mention of the late beginning of the 1968 bluefin tuna fishing season, and that the fishery was expected to develop later than the usual Memorial Day "kickoff" because of strong northerly winds and increased nearshore upwelling of cold water as far south as Cape San Lucas, Baja California.

To date, bluefin action has been reported as "very slow." First fishing of any consequence was reported on Uncle Sam Bank on June 10, but schools were reported scattered and difficult to approach. The first good catches were reported in the week ending June 23 from Cape San Lucas north to Abreojos Point, Baja California. Although the windy weather had abated somewhat because of a tropical depression which moved into the Mexico offshore region on June 21, only a few small purse seiners were in the lower Baja California area at the time to take advantage of the weather break; instead, most of the high seas fleet was still operating off southern Mexico and Central America in pursuit of yellowfin and skipjack tuna. No encouraging reports have been received since about July 1. A few of the small purse seiners are remaining close to "local" banks, but the majority of these are still operating in the Gulf of California and to the southward where excellent fishing for yellowfin and skipjack continues.

Weatherwise, normal midseason slackening in Baja California winds should result in a reduction of inshore upwelling and the consequent return to normal from the cold sea temperatures in this region. Furthermore, expected rapid warming in the southern California offshore region, coupled with warming inside Guadalupe Island, should stimulate earlier northward movement of bluefin than usual, and thus contribute to a southern California fishery this season.

Effort now being expended by purse seiners currently at sea under "open tickets" in quest of yellowfin tuna will probably be diverted in part to bluefin upon completion of their present trips. A substantial number of these boats is expected to devote at least part of their next trip to bluefin tuna if the fish show in appreciable numbers. Continuation of the present good weather trend should enable the efficient high-seas purse seine fleet to take quick advantage of any substantial concentration of fish that may appear.

Glenn A. Flittner
July 10, 1968

SEA SURFACE TEMPERATURE CHARTS, EASTERN PACIFIC OCEAN
JUNE 1968

Acknowledgements

The following organizations and stations contributed data for the June 1968 charts:

U.S. Bureau of Commercial Fisheries Exploratory Fishing and Gear Research Base, Seattle, Washington
U.S. Bureau of Commercial Fisheries Biological Laboratories La Jolla, California; Honolulu, Hawaii; and Seattle, Washington
U.S. Coast Guard Air Station, San Diego, California
U.S. Naval Communication Station Balboa, Fort Amador, Canal Zone
U.S. Naval Weather Service, Fleet Numerical Weather Central Monterey, California
Environmental Science Services Administration
U.S. Weather Bureau, San Diego, California
Hopkins Marine Station, Pacific Grove, California, J. P. Balesteri
Instituto de Fomento Pesquero, Santiago, Chile, by Izadore Barrett
Inter-American Geodetic Survey by David Ortega at Manzanillo, Mexico; L. A. Peren at Pt. Armuelles, Panama; V. E. Castillo at Tumaco, Columbia; S. Valenzuela at La Libertad, Ecuador; LMS, EGS, MCHF, APM at Talara, Peru; Felise Falcon at San Juan, Peru
Inter-American Tropical Tuna Commission, La Jolla and Terminal Island, California
Kelco Company, San Diego, California
Matson Navigation Company, San Francisco, California; S.S. Californian
Oregon State University, Department of Oceanography, Corvallis, Oregon R/V Yaquina
Pacific Missile Range, Range Operations Department, Geophysics Division Point Mugu, California
Pacific Oceanographic Group, Nanaimo, British Columbia, by H. J. Hollister from observations by G. C. Wilks at Langara Island Light; W. K. Richardson at Cape St. James Light; Lily Collins at Quatsino Lightstation; O. A. Edwards at Amphitrite Point Light
Scripps Institution of Oceanography, La Jolla, California, by Margaret Robinson and Hans Klein
W. R. Grace and Company, New York, by Dr. I. William Lane
Ships Martinac

Charts

Figure 1.--Mean sea surface temperatures (°F) derived from approximately 9000 observations. Squares show temperatures at weather ship stations. Numerals on shore are temperatures at coastal and lightship stations.

Figure 2.--Deviation of sea surface temperatures (°F) from long term charts of H.O. 225. Hatched areas are colder in 1968.

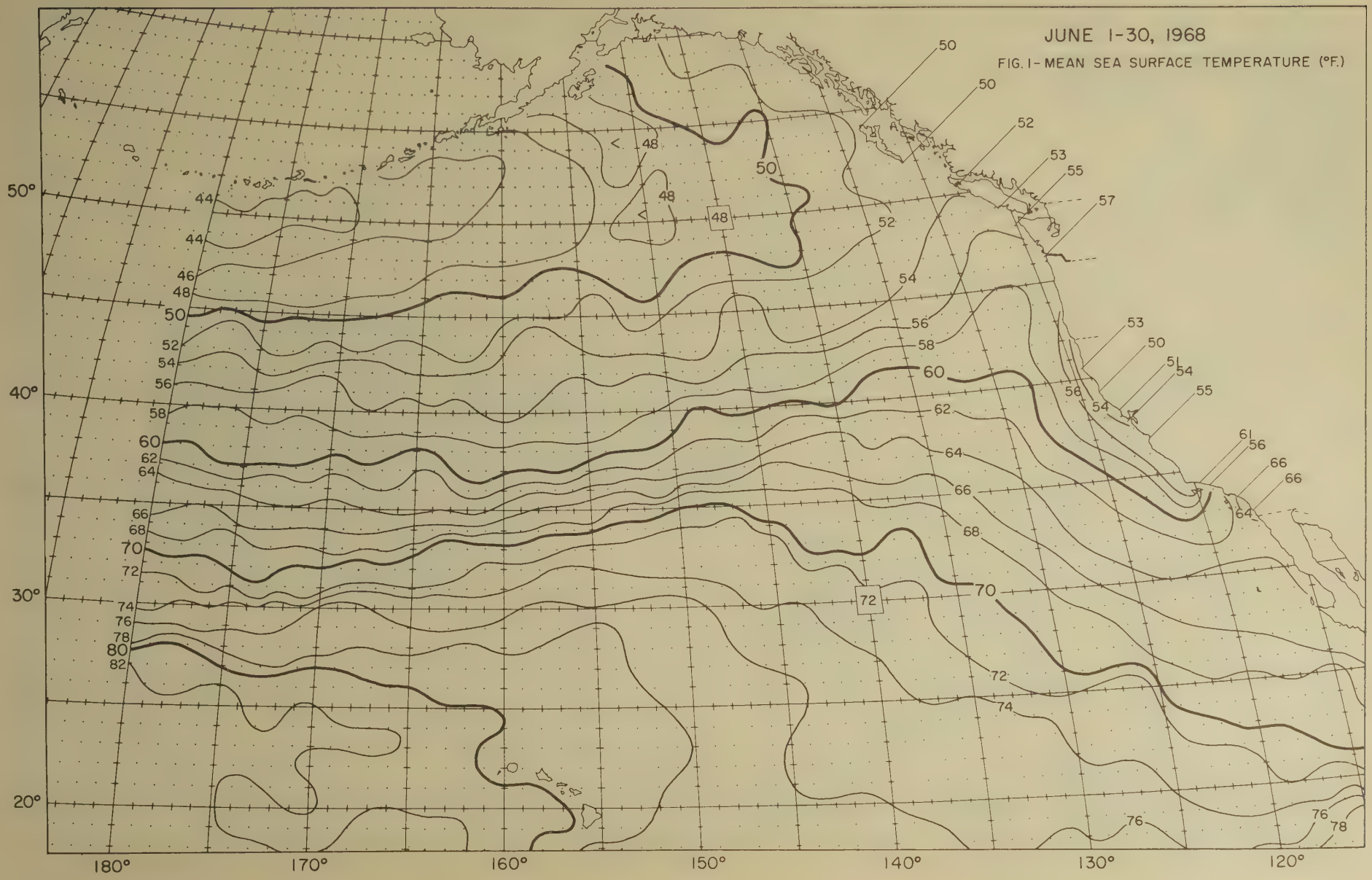
Figure 3.--Deviation of sea surface temperatures (°F) from those of June 1967. Hatched areas are colder in 1968.

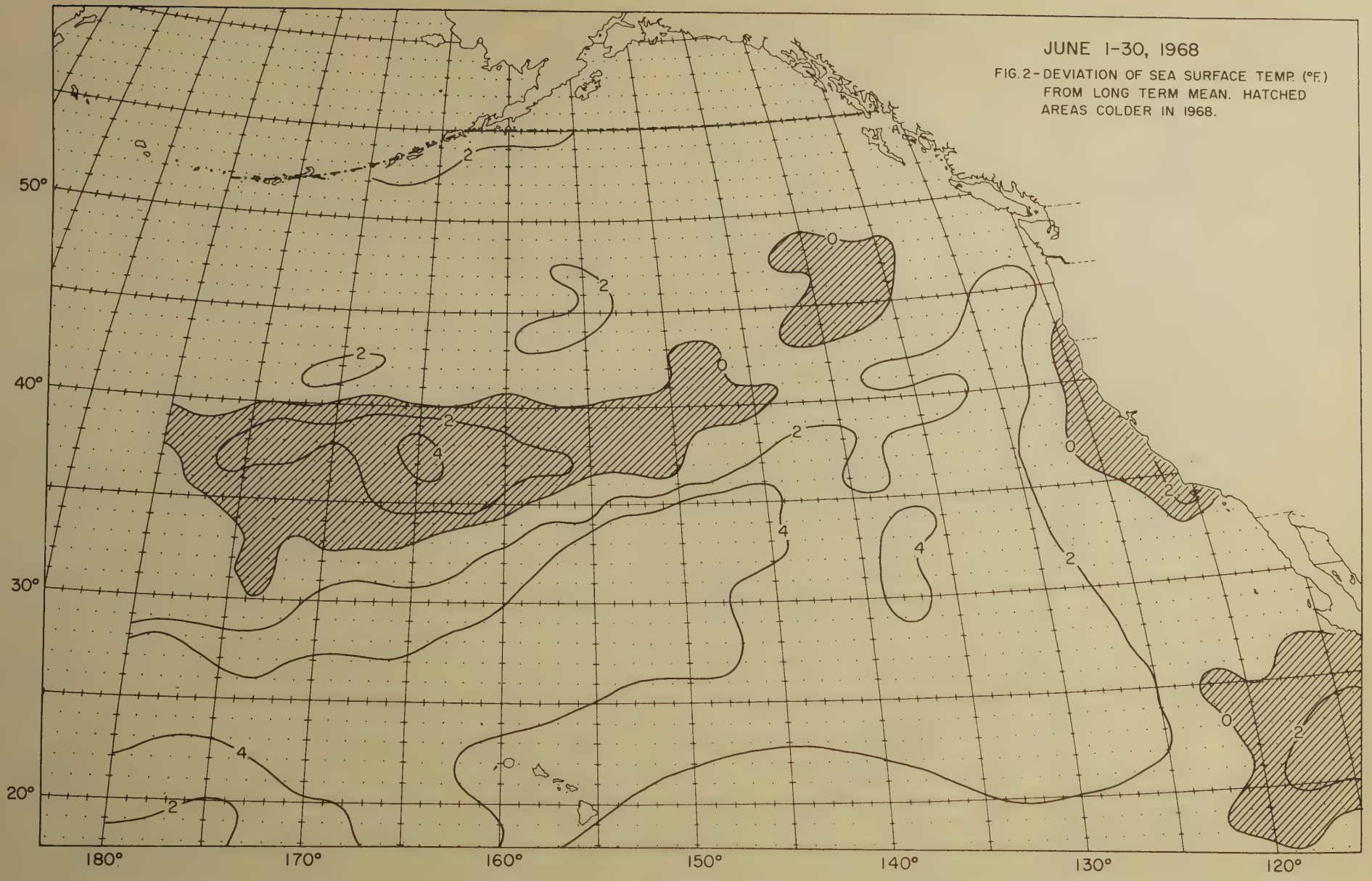
Figure 4.--Sea surface temperatures (°F) by 1-degree squares, approximately 3000 observations. Line under temperatures indicates average of two or more observations. Numerals on shore are temperatures at coastal stations.

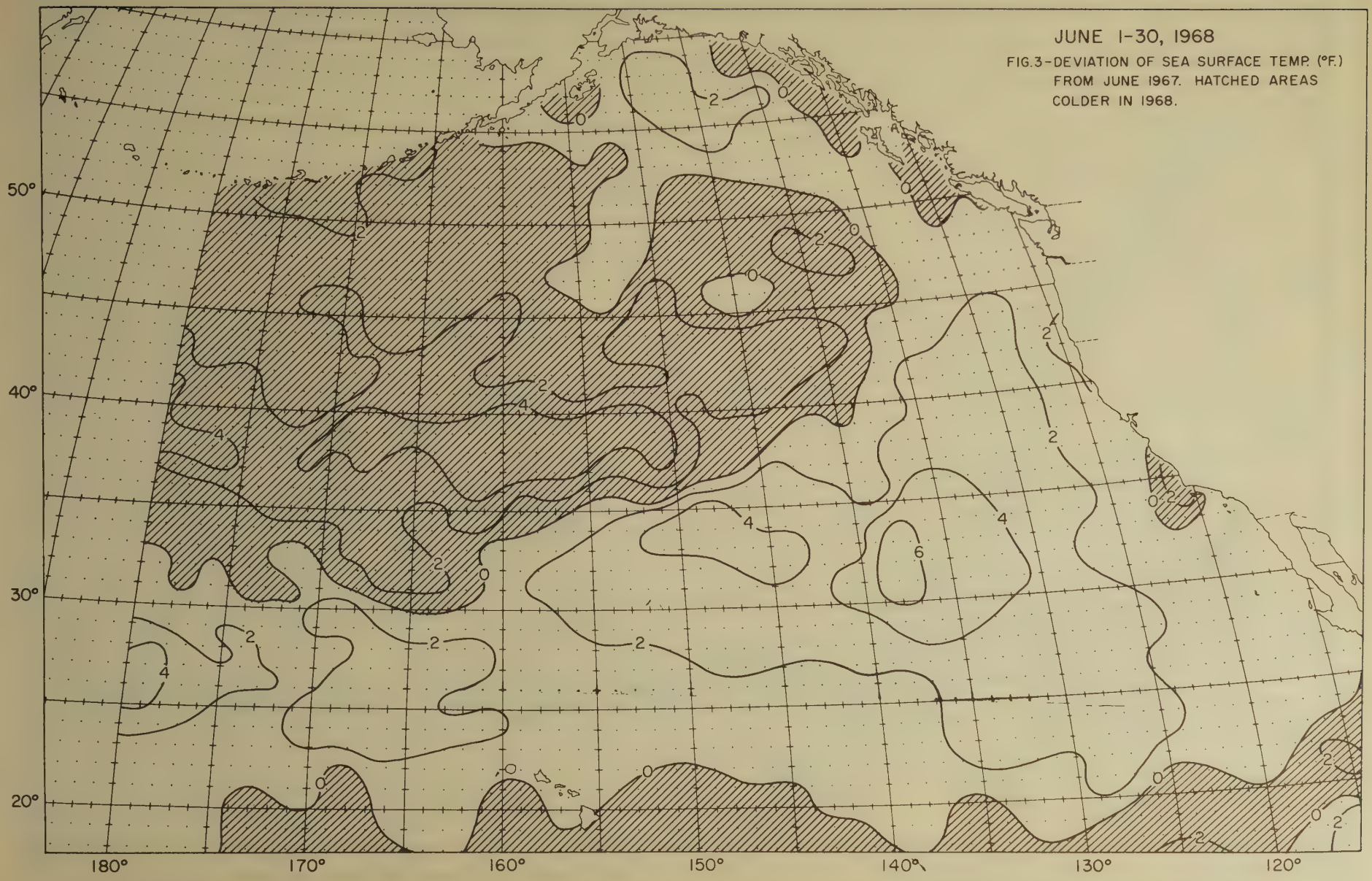
Figure 5.--Deviation of sea surface temperatures (°F) June 1968-June 1967 by 1-degree squares. Shaded areas are colder in 1968.

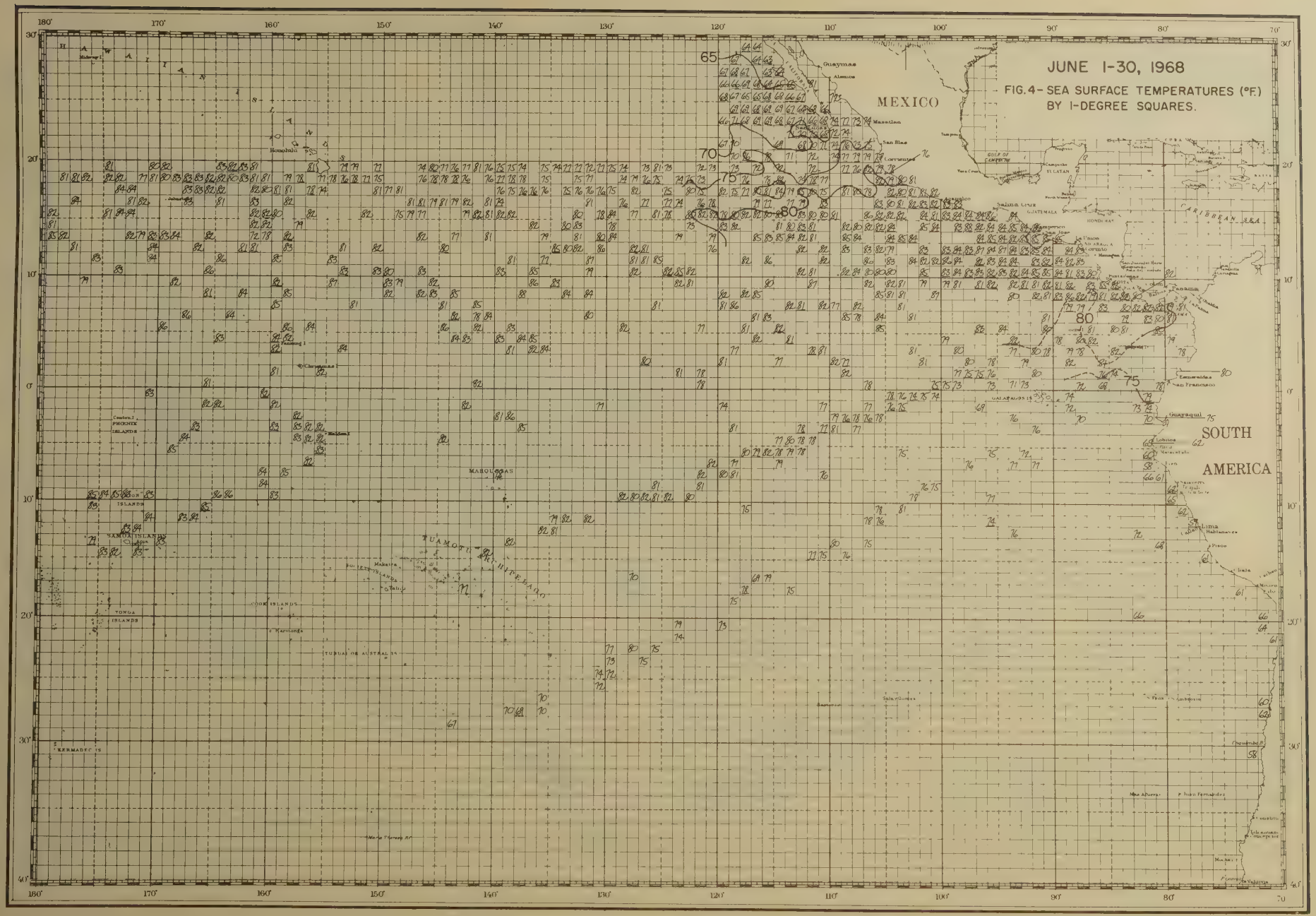
Figure 6.--Deviation of sea surface temperatures (°F) from 12-year mean (1947-1958) by 2-degree squares. Shaded areas are colder in 1968.

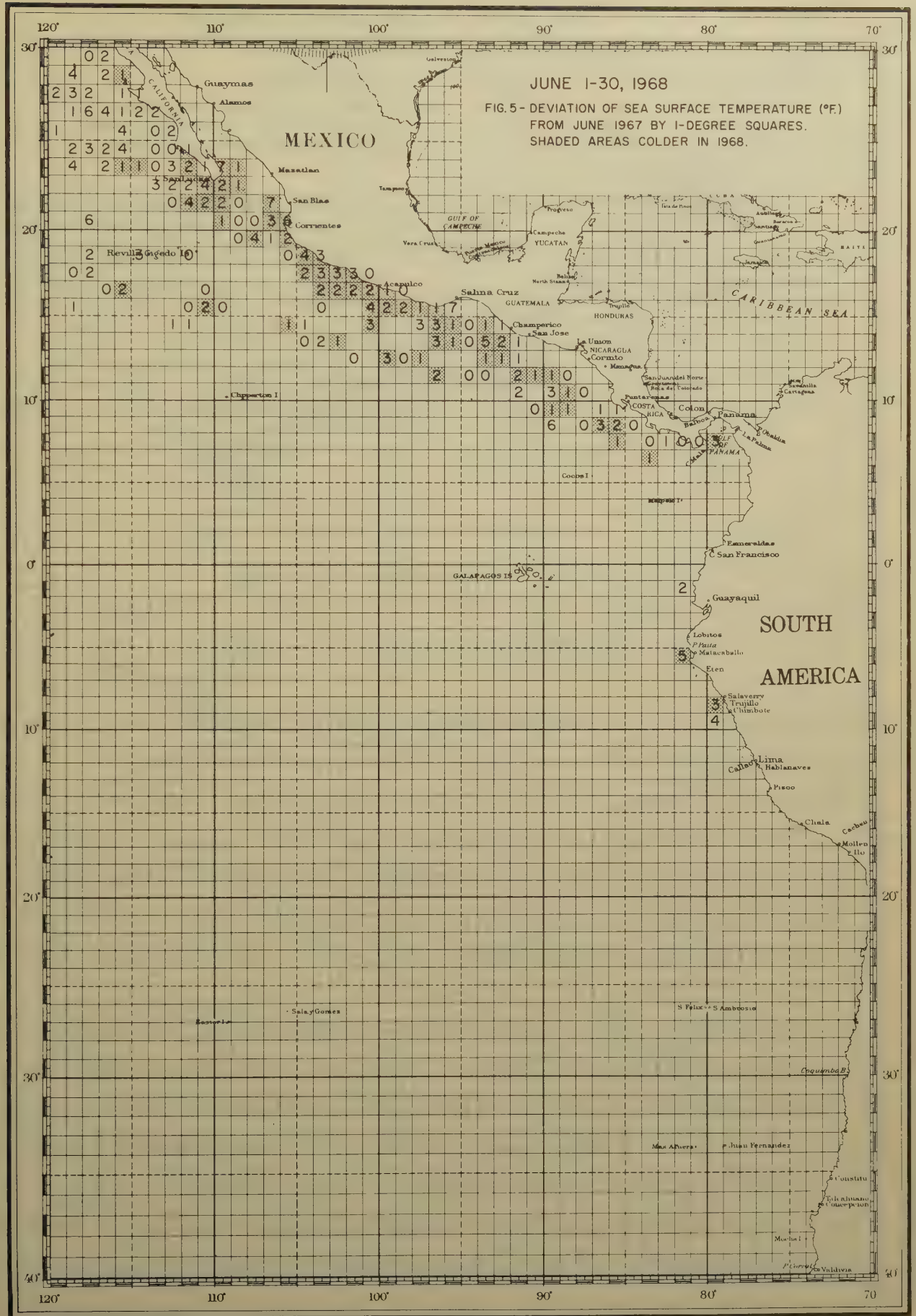
James A. Renner, Fishery Biologist (General)
Kenneth S. Raymond, Scientific Illustrator
July 10, 1968

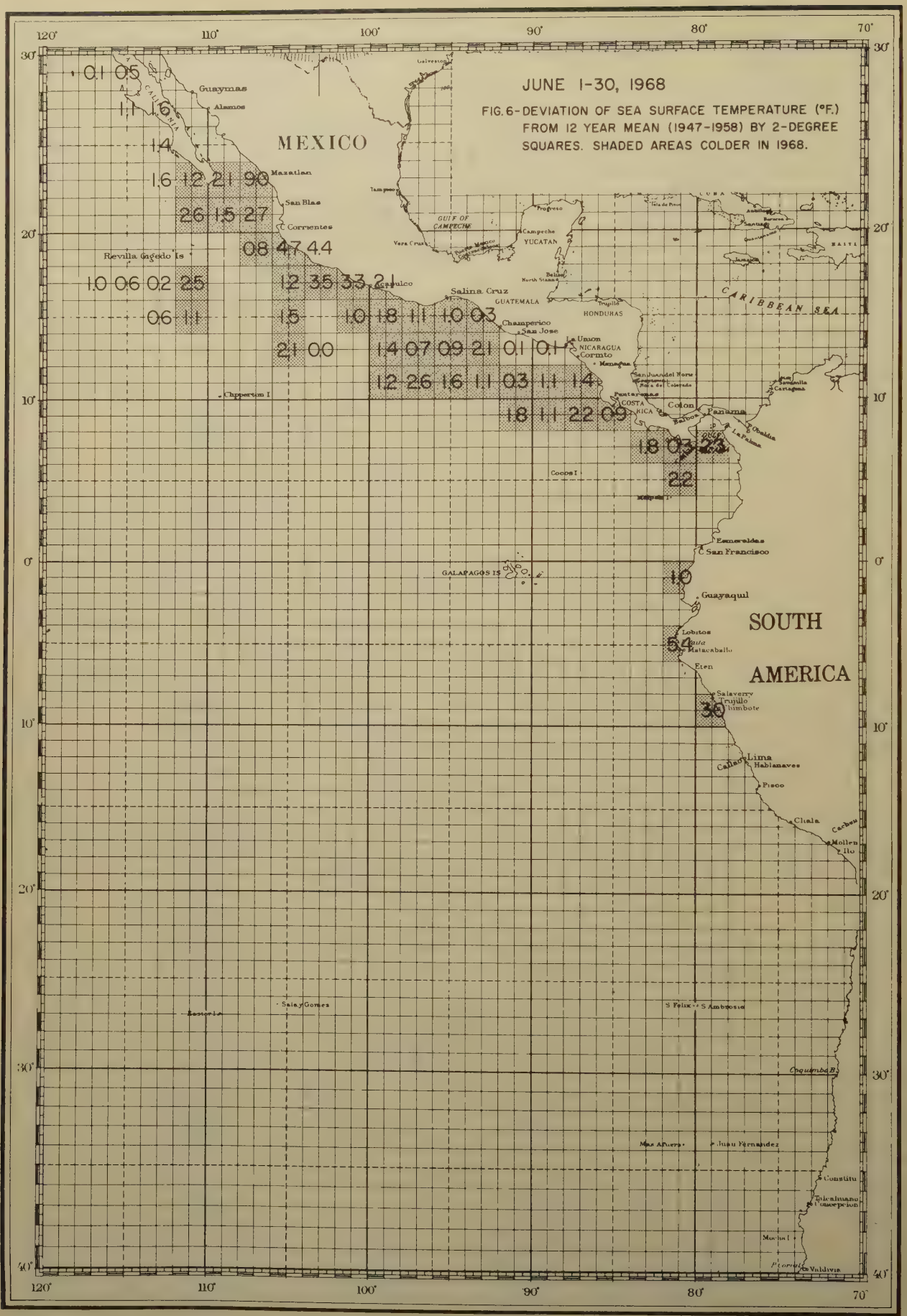

JUNE 1-30, 1968
FIG. 1 - MEAN SEA SURFACE TEMPERATURE (°F.)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


JUNE 1-30, 1968
FIG. 2 - DEVIATION OF SEA SURFACE TEMP. (°F.) FROM LONG TERM MEAN. HATCHED AREAS COLDER IN 1968.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
0
2
4


JUNE 1-30, 1968
FIG.3-DEVIATION OF SEA SURFACE TEMP. (°F.) FROM JUNE 1967. HATCHED AREAS COLDER IN 1968.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


JUNE 1-30, 1968
FIG. 4 - SEA SURFACE TEMPERATURES (°F.) BY 1-DEGREE SQUARES.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
HAWAIIAN ISLANDS
Honolulu
PHOENIX ISLANDS
SAMOA ISLANDS
TONGA ISLANDS
COOK ISLANDS
TUAMOTU ARCHIPELAGO
MARQUESAS
GALAPAGOS IS.
KERMADEC IS.
Guaymas
Mazatlan
San Blas
Acapulco
Salina Cruz
Panama
Buenaventura
Tumaco
Esmeraldas
Guayaquil
Lima
Callao
Pisco
Iquique
Arica
65
70
75
80


JUNE 1-30, 1968
FIG. 5 - DEVIATION OF SEA SURFACE TEMPERATURE (°F.) FROM JUNE 1967 BY 1-DEGREE SQUARES. SHADED AREAS COLDER IN 1968.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GUATEMALA
HONDURAS
NICARAGUA
COSTA RICA
PANAMA
GULF OF CAMPECHE
GULF OF PANAMA
GALAPAGOS IS
YUCATAN
CUBA
HAITI
JAMAICA
Guaymas
Alamos
Mazatlan
San Blas
Corrientes
Acapulco
Salina Cruz
Champerico
San Jose
La Union
Cormito
Managua
Chiriqui I
Cocos I
Malpelo I
Esmeraldas
San Francisco
Guayaquil
Lobitos
Paita
Matacaballo
Eten
Salaverry
Trujillo
Chimbote
Callao
Lima
Hablanaves
Pisco
Chala
Cocheu
Mollendo
Ilo
Arica
Iquique
Antofagasta
Caldera
Coquimbo
Valparaiso
Constitu
Talcahuano
Concepcion
Valdivia
Corinto
Puerto Limon
Colon
Panama
Balboa
Cartagena
Progreso
Campeche
Vera Cruz
Tampico
Galveston
Trujillo
Belize
North Stann
Caibarien
Nuevitas
Santiago
Guantanamo
Kingston
Port au Prince
Jacmel
Aux Cayes
Isla de Pinos
Isla Mujeres
Roca del Colorado
San Juan del Norte
Bocas del Toro
Puerto Armuelles
Punta Mala
Punta Burica
Isla Coiba
Isla Montuosa
Isla Taboga
Isla Otoque
Isla Perlas
Isla Cebaco
Isla Canal de Afuera
Isla Malpelo
Isla Gorgona
Isla Gallo
Isla Palma
Isla Tumaco


JUNE 1-30, 1968
FIG. 6 - DEVIATION OF SEA SURFACE TEMPERATURE (°F.) FROM 12 YEAR MEAN (1947-1958) BY 2-DEGREE SQUARES. SHADED AREAS COLDER IN 1968.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GUATEMALA
HONDURAS
NICARAGUA
COSTA RICA
GALAPAGOS IS
GULF OF CAMPECHE
YUCATAN
HAITI
Guaymas
Alamos
Mazatlan
San Blas
Corrientes
Revilla Gigedo Is
Salina Cruz
Champerico
San Jose
Corinto
Managua
Panama
Colon
Coiba I
Esmeraldas
San Francisco
Guayaquil
Lobitos
Talara
Eten
Salaverry
Trujillo
Chimbote
Lima
Callao
Pisco
Chala
Mollendo
Ilo
Salas y Gomez
S Felix
S Ambrosio
Juan Fernandez
Valdivia
120°
110°
100°
90°
80°
70°
30°
20°
10°
0°
40°

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES
Fishery-Oceanography Center
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BULLETIN NO. 68-1

FIRST ALBACORE OF 1968 SEASON CAUGHT OFF SOUTHERN CALIFORNIA

The Bureau of Commercial Fisheries research vessel David Starr Jordan, operated by the Fishery-Oceanography Center, La Jolla, California, has reported taking four 7-14 pound albacore on trolling lines near San Juan Seamount (33° N, 121° W) on June 12. The fish were taken in 60-61° F water while underway on a anchovy-sardine survey for the California Cooperative Oceanic Fisheries Investigations. The catch represents the first authenticated report this season, and suggests that the fish may be arriving on the Pacific coast feeding grounds up to 2-3 weeks earlier than in the past 3 years.

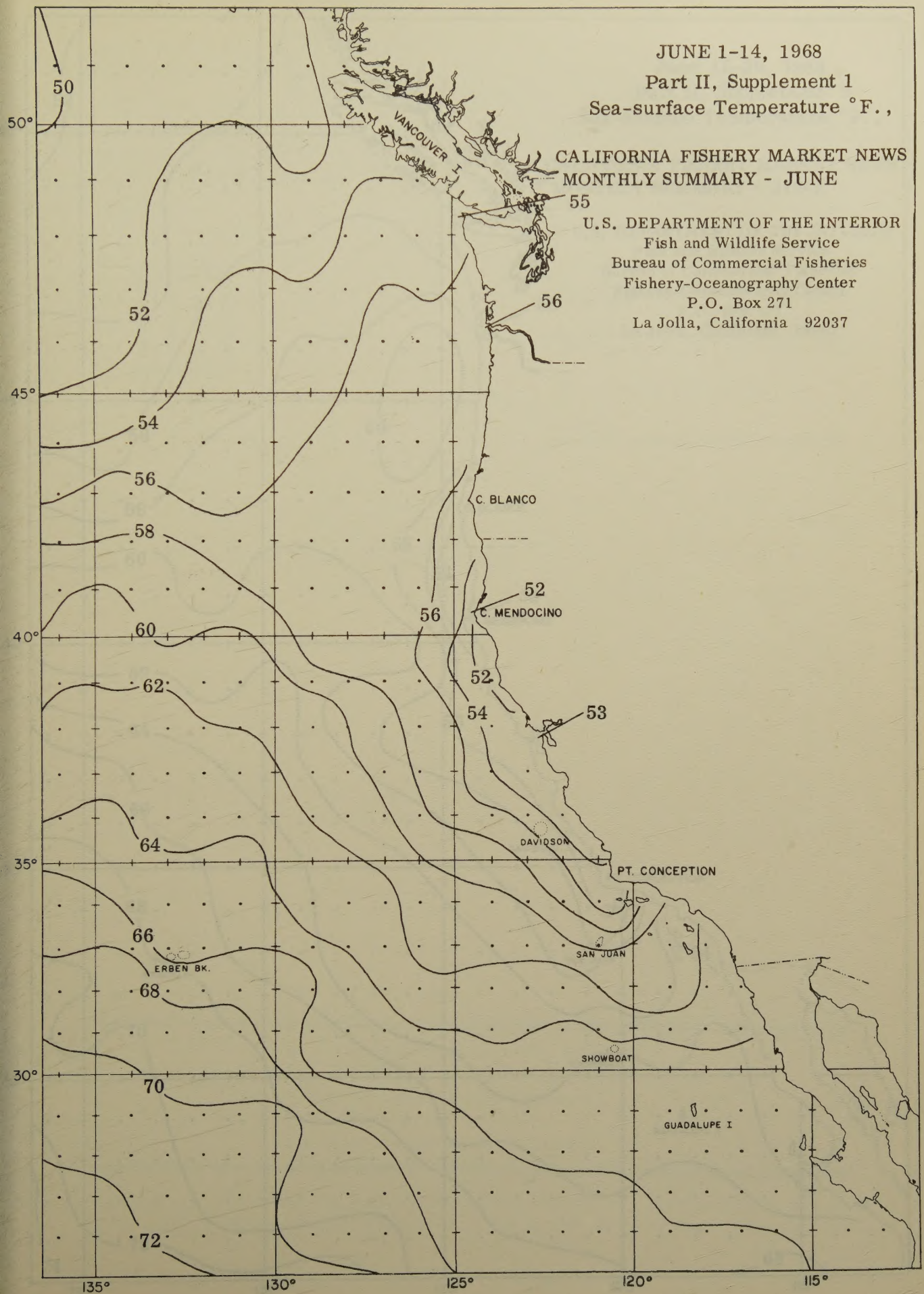
Issuance of the 1968 season forecast has been delayed about 3-4 weeks later than in previous years; this delay has been occasioned by substantial alterations in our forecasting methods. The full details of the forecast will be published in the May issue of the California Fishery Market News Monthly Summary, Part II--Fishing Information, and should be available to subscribers by June 24.

Albacore are expected to show in Southern California offshore waters in greater numbers than last year, and should contribute to near-normal landings for July. Total California season landings will probably show substantial improvement over the past 3 years and fall near the 1940-66 average of 15,000 tons. Open-ocean warming trends suggest that the fishery may move northward rapidly as the isotherms build northeastward into Oregon offshore waters. Thus, Oregon and Washington should expect to receive a significant portion of the total U.S. West Coast albacore production this year, but landings are expected to fall somewhat below 1966-67 levels.

Radio Station WWD, licensed to the Bureau of Commercial Fisheries and located on the campus of the Scripps Institution of Oceanography, University of California at San Diego, will resume its broadcasts of albacore fishery information on June 17. Double sideband (AM) voice broadcasts will emanate from WWD twice daily during weekdays only from June 17-October 31 on 4415.8 kcs and 8805.6 kcs at 0500 PST (0600 PDST) and 1945 PST (2045 PDST). Interested fishermen are invited to tune in on these broadcasts and to refer to the May issue of the California Fishery Market News Monthly Summary, Part II--Fishing Information for further details.

Glenn A. Flittner
Leader, Fishery-Oceanography Program

June 14, 1968


JUNE 1-14, 1968
Part II, Supplement 1
Sea-surface Temperature °F.,
CALIFORNIA FISHERY MARKET NEWS
MONTHLY SUMMARY - JUNE
U.S. DEPARTMENT OF THE INTERIOR
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P.O. Box 271
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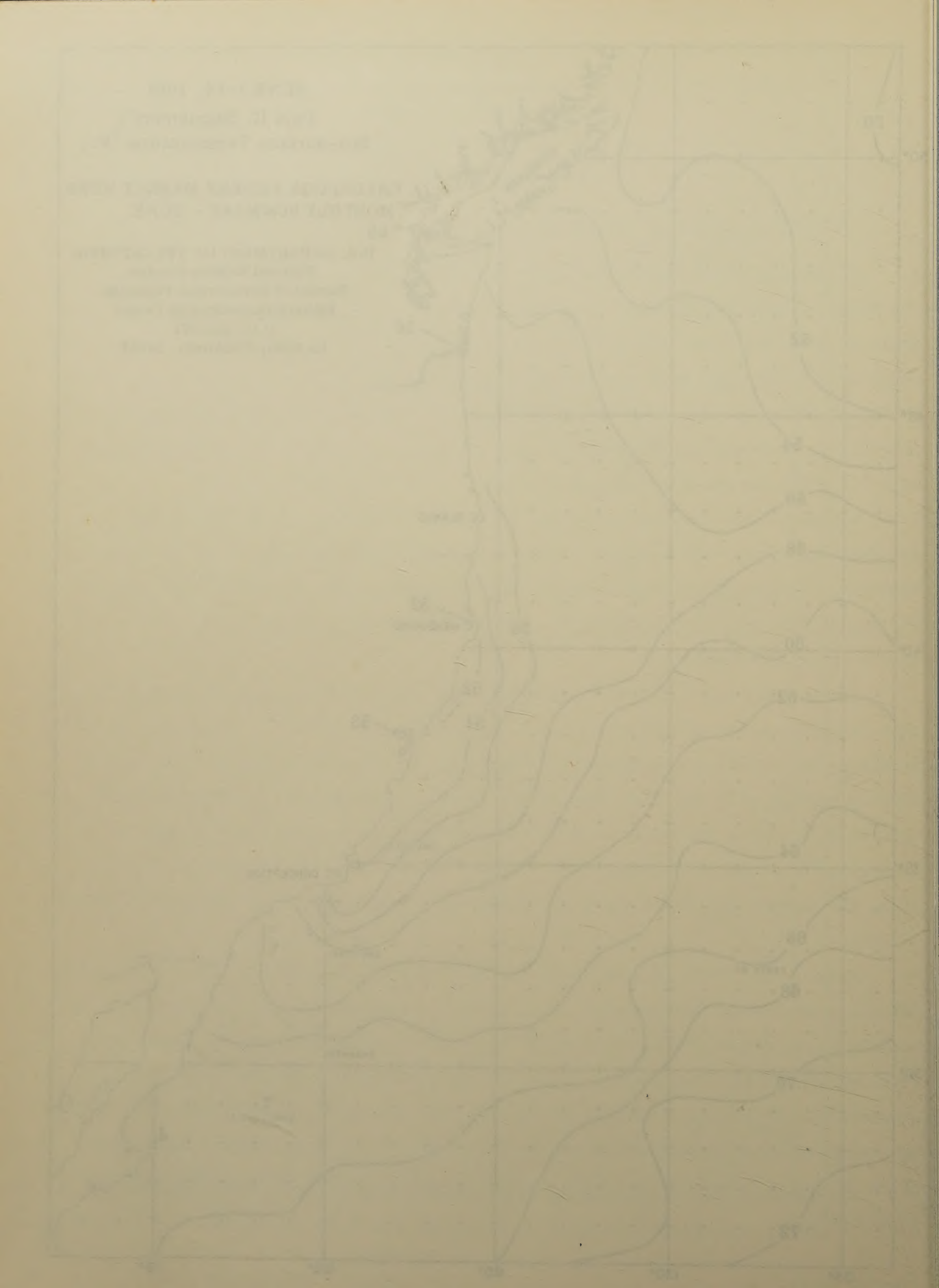
VANCOUVER I.
C. BLANCO
C. MENDOCINO
DAVIDSON
PT. CONCEPTION
SAN JUAN
ERBEN BK.
SHOWBOAT
GUADALUPE I
50°
45°
40°
35°
30°
135°
130°
125°
120°
115°



June 15-30, 1968
Part II, Supplement 2
Sea-surface Temperature °F.,

CALIFORNIA FISHERY MARKET NEWS
MONTHLY SUMMARY - JUNE

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